The Future School that Students in Multi-cultural Families Dream: Design Principles with Web-based Social Fiction

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Abstract: This paper is a report on designing backward planning to realize ideal future which students in multi-cultural families imagine without limits or conditions by using web-based social fiction. To achieve this, digital mind-map is used as a web-based social fiction tool to lower their cognitive load, and visualized group intelligence on future prediction. For research, 6 students from elementary school and 6 students from middle school students in multi-cultural families participate. They learned how to use digital mind-map and expressed their imagination of the society they wish for, then finally shared with other members. There was many opinion of dream school (or classroom). They want informal curriculum, fun class, don't want to be tied to the test, a lots of new experience, natural and free language with friends. This process will overcome the present multi-cultural education policy which focuses just on prescriptive problem solving, and become a foundation of tailored multi-cultural education that students sincerely needed and preferred.

Introduction

Rapid traffic·telecommunication growth leads to introduction of global society and increases of multi-cultural families in world trends. In case of Korea, especially, the number of children in multi-cultural families proliferated about 213% over last 5 years from 31,788 in 2010 to 67,806 in 2014 (Ministry of Education, 2014), thus the necessity of multi-cultural education is more required. Problems or troubles of students in multi-cultural families are studying and academic parts, the highest figure 13.3%, and the second ones are career education (Yoon Ah-reum, 2013). Reflecting this result, a lot of educational support policies have been carried out, but long-term plans such as education for establishing identity and for career are extremely inadequate than Korean language teaching and mentoring programs related academic problems as a short-term prescription. Children in multi-cultural families, generally, tend to be confused and in conflicted with values and living attitudes of parents' generation. Such environment makes them prevent from establishing their identity because they might not feel a sense of belonging neither Koreans nor foreigners (Jo Yeong-dal, 2006). Furthermore, unestablished identity influenced on deciding jobs, according to Galinsky and Fast(1966),the most definite expression as one's identity is determining career, thus if there is identity crisis, one could feel helplessness and have difficulties in future decision. This implicates tailor-made education considering characteristics and varieties of multi-cultural students. Therefore, the research will find out the ideal future society they envisage with digital mindmap, a kind of social fiction (Lee Won-jae et al., 2014) as a method of eliciting their opinions under no conditions. Based on this, backward planning would be designed to realize the desirable future society deduced from group intelligence. The backward planning is a design principle reflecting needs analysis of multi-cultural students, and becomes a starting signal of truly customized multi-cultural education as a long-term plan which focuses on visions and objectives in order to overcome limits of prescriptive multi-cultural education that only emphasizes on solving surface problems. After all, progressing social fiction by comparing with non-multi-cultural students will help find the singularities and similarities of society they desire between them and it will give significance on this project.

The Study

The Ministry of Education in Korea(2006) define Multicultural Family as "Family configured have different background like Ethnic and Culture", and policy support international marriage family and Foreign workers' kids. Based on this, several support of multicultural education policies have established (the Ministry of Education, 2010) but at same time it has been pointed out that there are common problems on those policies. (Kim, Woo, 2012) Firstly, most of developments are apart from diversities, they are usually focus on particular programs such as in Korean language or specially for Korean culture and so on. So the new programs are often overlap and inefficient. The programs are insufficient and need to develop programs such as laws that helps for social adjustments, knowledge of policies, career consultant and programs that lead to maximize their potential. Secondly, those programs are provided from the government departments their own and usually remain as short term events that does not last long which means that there are absolutely lack of long term educational supports for the students from multi-cultural families. Lastly, there are lack of educational considerations for students with the potential due to fragmented policies focused only on students with poor learning skills. In other word, we are constantly providing the policies which we think it is necessary for them, not the policies that multi-cultural students actually need.

Then what do they need? The answer is 'Needs assessment'. This study use "SF (Social Fiction)" as method of Needs assessment. When most people think about SF, it means Science Fiction. Science Fiction is fiction including unrealizable and fabricated story based scientific facts. An imagination in science fiction leads to advance of science and technology. Resolving problem by imagining is available to apply in society like science and technology. Social Fiction (SF) is to predict future by imagining future without social limit condition and to resolve problem. It is to imagine 20~30 years from this time and to predict results rather to solve a short-range problem. In education, we do needs analysis to resolve educational problem. So in this study, we explore Social Fiction's possibility for educational needs analysis method to resolve educational problem. We applied social fiction method based digital mindmap to students in multi-cultural families for finding educational needs.

Findings

This study is designing backward planning to realize ideal future which students in multi-cultural families imagine without limits or conditions by using web-based social fiction. To achieve this, digital mind-map is used as a web-based social fiction tool to lower their cognitive load. For this study, 6 students from elementary school and 6 students from middle school students in multi-cultural families participate. They learned how to use digital mind-map, expressed their imagination of the society they wish for, as a form of letters or pictures by using the tool, and finally shared with other members. The title is "My Dream School (or Class)." Students use 'OK MINDMAP (http://okmindmap.com)' to express their imagination. Below the mind map created by one student.
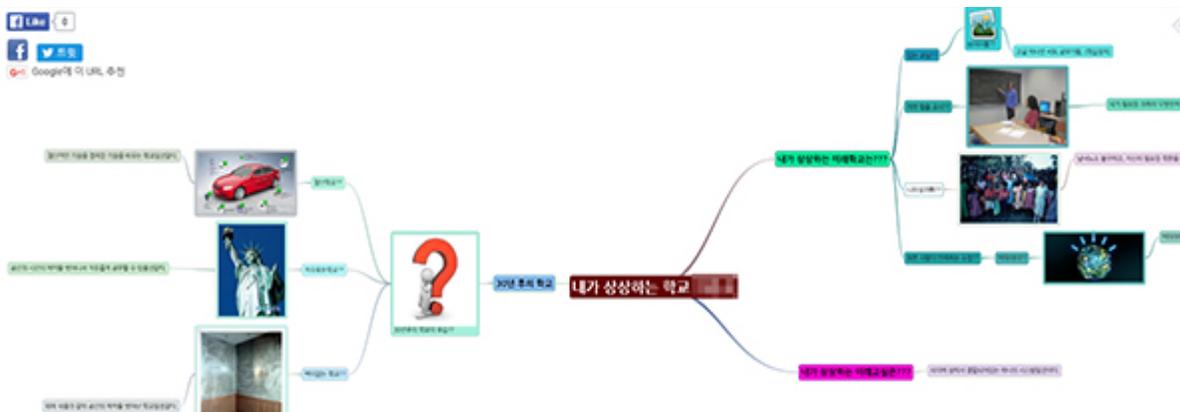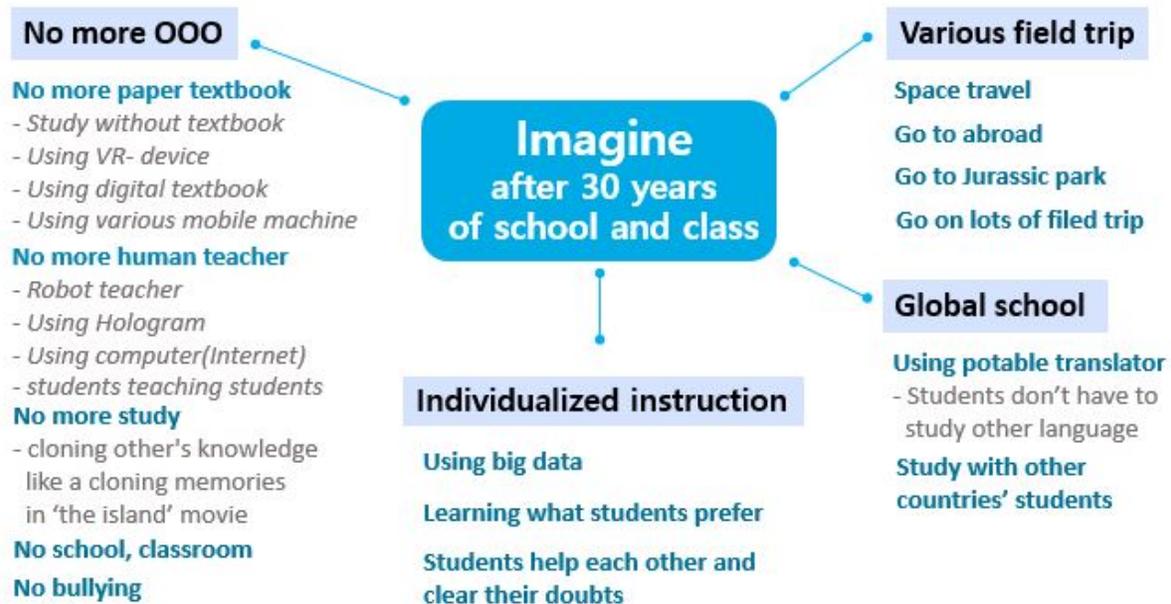

Figure1 Digital mindmap created by students

12 students created mindmap respectively, after finished it they share their mind map each other. It could reduce the time than present each mindmap. Also all of students could see all of students' mind map, so they created mindmap hardly. Next figure is mindmap gather all of the comments of students'.

No more OOO

No more paper textbook
- Study without textbook
- Using VR- device
- Using digital textbook
- Using various mobile machine

No more human teacher
- Robot teacher
- Using Hologram
- Using computer(Internet)
- students teaching students

No more study
- cloning other's knowledge
  like a cloning memories
  in 'the island' movie

No school, classroom

No bullying

Imagine
after 30 years
of school and class

Various field trip

Space travel

Go to abroad

Go to Jurassic park

Go on lots of filed trip

Global school

Using potable translator
- Students don't have to
  study other language

**Study with other
countries' students**

Individualized instruction

Using big data

Learning what students prefer

**Students help each other and
clear their doubts**

Figure2 multi-cultural families Students' dream school (or classroom)

10 of 12 students dreamed school that don't need textbooks. They said future school maybe use virtual reality machine, digital textbook, or variable mobile machine. It means they want interesting cotents instead of heavy and bored text book. Also they imagine computer or hologram class and robot teacher. Someone can think it extra ordinary things, but there are robot teachers in Koran school already. Even if He (or She) is teaching assistant. There are many opinion about no more school and class. Students said physical space of school and classroom won't be need anymore. Opinions of individualized instruction can be found. One elementary school student said 'Using big data' can be help individualized instruction, it was very good idea and made me surprised. Because Google already use it and develop a technique for future education. Only 12years old student advance an opinion like global company. Some students also have said about teaching each other between students. It is 'Havruta', a student-centered education approach. It is a good method that can be applied to public education. And every student want to do studies not related to exams. Largest numbers of opinions are 'various field trip'. It should be Korea school's field trips are limited place and go again where they went already. In other world, Field trip places are fixed. But students want to go other place. They want Interesting and newly experience get out normal and formal class. Nevertheless Jurassic park and go to space are impossible now, it is very fun idea. If we combine this idea and above idea of VR class, we can make instruction design model about VR space experience class and VR Jurassic park experience class. Also they said 'Global school.' They wish to have portable translator without needs of studying foreign languages or studying with students from different countries

Conclusions

Based on mind map, analysis of the muti-cultural families student needs from school are as follow.

Student's Dream School (or Class)	Feasible plan
No more textbook	- Designate no textbook day - Distribute digital textbook - Using AR machine or VR machine - Using variable mobile machine
No more teacher	- Teaching each other between students
No more study	- Go field trips or do various activity in order to learn while having fun
No bullying	- To run anti-bullying programs - Have a HomeRoom time
Learning what they prefer	- Increase club activity time
Individualized instruction	- Set an online task ☐ using big data ☐ Individualized
Various field trip	- Decide to discuss the new location with students
Global school	- Multiple culture family parents' daily teacher - Exchange student system with abroad school - Using skype or video call with foreign students

To sum up, students in multi-cultural families want informal curriculum, fun class, don't want to be tied to the test, a lots of new experience, natural and free language with friends. They want not only simple Korean class, but also various class experience, individualized instruction, demand of Globalization and so on. It means Korea policy of students in multi-cultural families have problem. Because existing policy is limited that they are concentrate only on Korean language education or financial supports. Also I found very exiting result. As to start this study, I think students in multi-cultural families have different side of dream school. But they are similar to non-in multi-cultural families' students. This result show us, we putting on sunglasses was supproting until now. This result shows that we have been suppoting them in our judgement.

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